

IN THE CLAIMS:

1.-14. (Cancelled)

15. (New) A recording medium comprising:

a graphics stream which represents an interactive display including a plurality of graphical button materials to be overlaid with a motion picture wherein:

5 said graphics stream includes a plurality of graphics data sets $[[:]]$;

the interactive display includes at least a button material A and a button material B,

the graphics data sets include a graphics data set $G[A_n, B_n]$ corresponding to a normal state, a graphics data set $G[A_s, B_s]$ corresponding to a selected state, and a graphics data set $G[A_a, B_a]$ corresponding to an active state;

10 the graphics data set $G[A_n, B_n]$ corresponding to the normal state includes at least graphics data A_n composing the normal state n of the button material A, and graphics data B_n composing the normal state n of the button material B;

15 the graphics data set $G[A_s, B_s]$ corresponding to the selected state includes at least graphics data A_s composing the selected state s of the button material A, and graphics data B_s composing the selected state s of the button material B,

the graphics data set $G[A_a, B_a]$ corresponding to the active state includes at least graphics data A_a composing the active state a of the button material A, and graphics data B_a composing the active state a of the button material B; and

20 the plurality of graphics data sets are disposed in an order of the graphics data set $G[A_n, B_n]$, the graphics data set $G[A_s, B_s]$, and the graphics data set $G[A_a, B_a]$.

16. (New) The recording medium of Claim 15, further comprising play list information, wherein:

said play list information includes main-path information and sub-path information;

5 said main-path information indicates a video stream as a main stream and defines a reproduction section of the main stream;

said sub-path information indicates said graphics stream as a sub stream which synchronizes with said main stream, defines a reproduction section of said sub stream and includes synchronization information;

10 said synchronization information indicates a synchronization point on a reproduction time axis of said main stream; and

said interactive display is represented to be overlaid with a picture of said video stream in said reproduction section of said main stream.

17. (New) The recording medium of Claim 16, wherein:

the recording medium containing the graphics stream and the play list information is a re-writable recording medium, and

said video stream is recorded on a read-only optical disc.

18. (New) A reproduction apparatus for reproducing a graphics stream, said reproduction apparatus comprising:

a graphics decoder operable to decode the graphics stream and obtain an interactive display including a plurality of graphical button materials, wherein:

5 the graphics stream includes a plurality of graphics data sets;

the interactive display includes at least a button material A and a button material B;

the graphics data sets include a graphics data set $G[A_n, B_n]$ corresponding to a normal state, a graphics data set $G[A_s, B_s]$ corresponding to a selected state, and a graphics data set $G[A_a, B_a]$ corresponding to an active state;

the graphics data set $G[A_n, B_n]$ corresponding to the normal state includes at least graphics data A_n composing the normal state n of the button material A, and graphics data B_n composing the normal state n of the button material B;

the graphics data set $G[A_s, B_s]$ corresponding to the selected state includes at least graphics data A_s composing the selected state s of the button material A, and graphics data B_s composing the selected state s of the button material B;

the graphics data set $G[A_a, B_a]$ corresponding to the active state includes at least graphics data A_a composing the active state a of the button material A, and graphics data B_a composing the active state a of the button material B; and

the plurality of graphics data sets are disposed in an order of the graphics data set $G[A_n, B_n]$, the graphics data set $G[A_s, B_s]$, and the graphics data set $G[A_a, B_a]$;

said graphics decoder uses graphics data belonging to the graphics data set $G[A_n, B_n]$ corresponding to the normal state and graphics data belonging to the graphics data set $G[A_s, B_s]$ corresponding to the selected state for presenting an initial display of the interactive display, and uses graphics data that, among the graphics data belonging to the plurality of graphics data sets $G[A_n, B_n]$, $G[A_s, B_s]$, and $G[A_a, B_a]$, is not used for the initial display, for updating the interactive display upon a user operation.

19. (New) The reproduction apparatus of Claim 18, further comprising:

a graphics plane storing at least some of decompressed graphics data that is to be overlaid with the motion picture, wherein

5 said graphics decoder includes:

a graphics processor decoding the graphics data;

an object buffer storing decompressed graphics data obtained by the decoding; and

10 a graphics controller writing the decompressed graphics data to the graphics plane when said graphics processor has completed decoding first or last graphics data in a graphics data set (G[As,Bs]) for rendering the selected state.

20. (New) The reproduction apparatus of Claim 19, said reproduction apparatus reads playlist information recorded on a recording medium, wherein:

the play list information includes main-path information and sub-path information;

5 the main-path information indicates the video stream as a main stream and defines a reproduction section of the main stream, the video stream including pictures;

the sub-path information indicates the graphics stream as a sub stream which synchronizes with the main stream, defines a reproduction section of the sub stream and includes synchronization information;

10 the synchronization information indicates a synchronization point on a reproduction time axis of the main stream; and

the interactive display is represented to be overlaid with a picture of the video stream in the reproduction section of a main stream.

21. (New) The reproduction apparatus of Claim 20, wherein:

the recording medium containing the graphics stream and the play list information
is a re-writable recording medium, and
said video stream is recorded on a read-only optical disc.

22. (New) A recording method for recording to a recording medium, said method
comprising the steps of:

creating application data; and

recording the created application data to the recording medium, wherein:

5 the application data includes a graphics stream;

the graphics stream represents an interactive display to be overlaid with a
motion picture, the interactive display including a plurality of graphical button materials;

the graphics stream includes a plurality of graphics data sets each forming
a group of graphics data which renders a predetermined state of the graphical button
materials; and

10 the interactive display includes at least a button material A and a button
material B,

the graphics data sets include at least a graphics data set $G[A_n, B_n]$
corresponding to a normal state, a graphics data set $G[A_s, B_s]$ corresponding to a selected
state, and a graphics data set $G[A_a, B_a]$ corresponding to an active state,

15 the graphics data set $G[A_n, B_n]$ corresponding to the normal state includes
at least graphics data A_n composing the normal state n of the button material A, and
graphics data B_n composing the normal state n of the button material B,

the graphics data set $G[A_s, B_s]$ corresponding to the selected state includes
20 at least graphics data A_s composing the selected state s of the button material A, and
graphics data B_s composing the selected state s of the button material B,

the graphics data set $G[A_a, B_a]$ corresponding to the active state includes
at least graphics data A_a composing the active state a of the button material A, and
graphics data B_a composing the active state a of the button material B, and

25 the plurality of graphics data sets are disposed in an order of the graphics
data set $G[A_n, B_n]$, the graphics data set $G[A_s, B_s]$, and the graphics data set $G[A_a, B_a]$.

23. (New) The recording method of Claim 22, further comprising the step of
recording play list information to the recording medium, wherein:

the play list information includes main-path information and sub-path
information;

5 the main-path information indicates a video stream as a main stream and defines a
reproduction section of the main stream;

said sub-path information indicates said graphics stream as a sub stream which
synchronizes with said main stream, defines a reproduction section of said sub stream and
includes synchronization information;

10 said synchronization information indicates a synchronization point on a
reproduction time axis of said main stream; and

said interactive display is represented to be overlaid with a picture of said video
stream in said reproduction section of said main stream.

24. (New) The recording method of Claim 23, wherein:

the recording medium containing the graphics stream and the play list information
is a re-writable recording medium, and

5 said video stream is recorded on a read-only optical disc.

25. (New) A method of reproducing a graphics stream which represents an
interactive display including a plurality of graphical button materials to be overlaid with a
motion picture, said reproduction method comprising the steps of:

decoding the graphics stream; and

5 displaying the interactive display overlaid with the motion picture; wherein:

the graphics stream includes a plurality of graphics data sets each forming a group
of graphics data which renders a predetermined state of the graphical button materials; the
interactive display includes a button material A and a button material B,

the graphics data sets include a graphics data set $G[A_n, B_n]$ corresponding to a
10 normal state, a graphics data set $G[A_s, B_s]$ corresponding to a selected state and a graphics data
set $G[A_a, B_a]$ corresponding to an active state,

the graphics data set $G[A_n, B_n]$ corresponding to the normal state includes at least
graphics data A_n composing the normal state n of the button material A and graphics data B_n
composing the normal state n of the button material B,

15 the graphics data set $G[A_s, B_s]$ corresponding to the selected state includes at least
graphics data A_s composing the selected state s of the button material A and graphics data B_s
composing the selected state s of the button material B,

the graphics data set $G[Aa, Ba]$ corresponding to the active state includes at least graphics data Aa composing the active state a of the button material A and graphics data Ba composing the active state a of the button material B, and

the plurality of graphics data sets are disposed in an order of the graphics data set $G[An, Bn]$, the graphics data set $G[As, Bs]$, and the graphics data set $G[Aa Ba]$; and

the displaying step uses graphics data belonging to the graphics data set $G[An, Bn]$ corresponding to the normal state and graphics data belonging to the graphics data set $G[As, Bs]$ corresponding to the selected state for presenting an initial display of the interactive display, and uses graphics data that, among the graphics data belonging to the plurality of graphics data sets $G[An, Bn]$, $G[As Bs]$ and $G[Aa Ba]$ is not used for the initial display, for updating the interactive display upon a user operation.